WE CLAIM:

1. An enzyme-immunoassay of either the sandwich or competitive type for the detection of *L. pneumophila* serogroup 1 in environmental water in which the detecting agents are antigen-specific antibodies obtained by purifying raw polyvalent anti-*Legionella pneumophila* serogroup 1 antibodies on a chromatographic column to which is coupled a conjugate of an essentially protein free polysaccharide antigen of *L. pneumophila* and a spacer molecule.

2. An enzyme immunoassay according to claim 1 in which a pre-assay antigen concentration step is first performed on the water sample.

3. An enzyme immunoassay according to claim 2 in which the concentration step is filtration or centrifugation of at least 100 ml. of water and it is followed by rubbing the pad end of the swab over the surface on which the antigen has been concentrated, and delivering the material collected by the swab to the assay.

4. An enzyme immunoassay according to claim 2 wherein the concentration step comprises mixing at least 100 ml. of water with an aqueous solution of finely divided magnetic particles which have been precoated with the antigen-specific antibody of claim 1 and the resulting antibody-antigen product is subjected to a modified EIA procedure.

5. An enzyme immunoassay according to claim 1 wherein the enzyme is horseradish peroxidase, the assay is a sandwich assay and it is conducted in a tube coated with the antigen-specific antibodies defined in claim 1 and the sample is incubated with the antigen-specific antibodies for at least 20 minutes.

6. An enzyme immunoassay according to claim 1 in which the antigen-specific antibodies are present in an amount between 0.05 μg per test and 5.0 μg per test.

7. An enzyme immunoassay according to claim 1 wherein at least 0.05 μg of antigen-specific antibodies must be used in each test.

8. A rapid modified enzyme immunoassay according to claim 1 in which the bacterium to be detected is another serotype of *Legionella pneumophila* and the purified antibodies employed are antibodies to the same serotype.

9. A rapid modified enzyme immunoassay according to claim 1 wherein the bacterium to be detected is a different species of *Legionella* from *L. pneumophila* and the purified antibodies employed are antibodies to that species of *Legionella*.

Ins B1

09/458,561.121098